Chapter 1 : Introduction to Fluid Statics
2 Marks
1. Write the following in one line a. Bingham Plastic b. Pseudo Plastic Fluid
5 Marks
1. Derive a mathematical equation for how pressure changes within a static fluid when it is a. Compressible Fluid (density not constant) b. Incompressible Fluid (density constant)

Chapter 2 : Fluid Flow Phenomena and Fluidization
2 Marks
1. Write Bernoulli's Equation with kinetic energy correction, fluid friction correction and pump work. 2. Write the following in one line a. Potential Flow b. Steady Flow 3. A fluid of density 1200 kg/m3 is passing through a horizontal pipe of entry radius 2 cm at a velocity 12 m/sec. What is the exit diameter of the pipe, if the fluid exits at 3 m/sec? What is the mass flow rate fluid? 4.
5 Marks
1. Derive Bernoulli's Equation (in meter units) for inviscid, incompressible fluid. Write the names of the relevant terms.

Chapter 4 : Conduction
2 Marks
1. How does heat transfer happen through a medium? Arrange the three different heat transfer mechanisms in the order of their heat transfer rate. 2. What is the difference between heat capacity and thermal conductivity?
5 Marks
1. A furnace is constructed with 229 mm thick of fire brick, 115 mm of insulation brick and again 229 mm of building brick. The inside temperature is 1223 K (950^0C) and the temperature at the outermost wall is 323 K (50^0C). The thermal conductivities of fire brick, insulating brick and building brick are 6.05 W/(m.K), 0.581 W/(m.K) and 2.33 W/(m.K). Find the heat lost per unit area and temperature at the interfaces.